

N. W. NORTHRUP.

Heating Stove.

No. 34,768.

Patented March 25, 1862.

Fig. 2

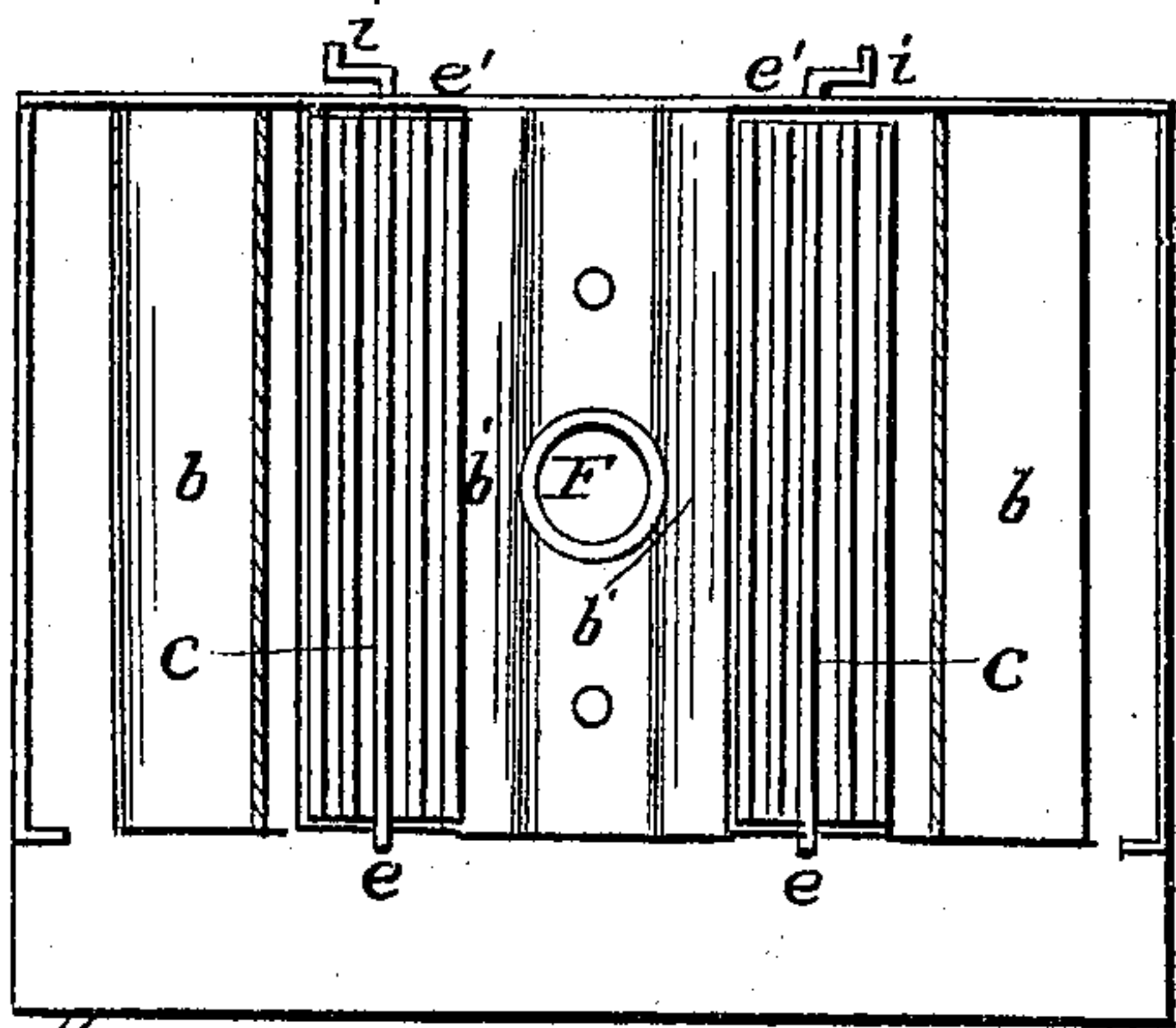


Fig. 3.

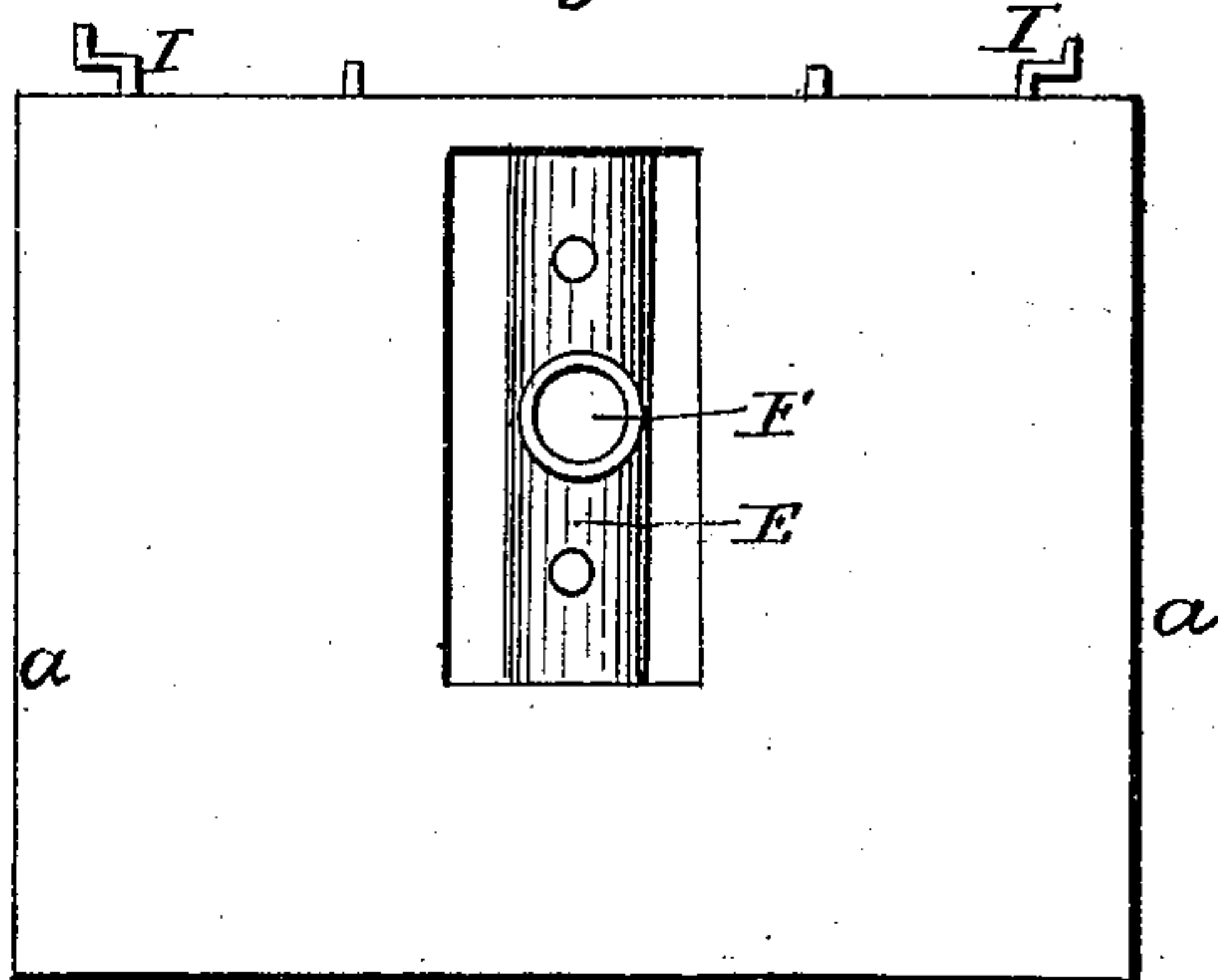


Fig. 1.

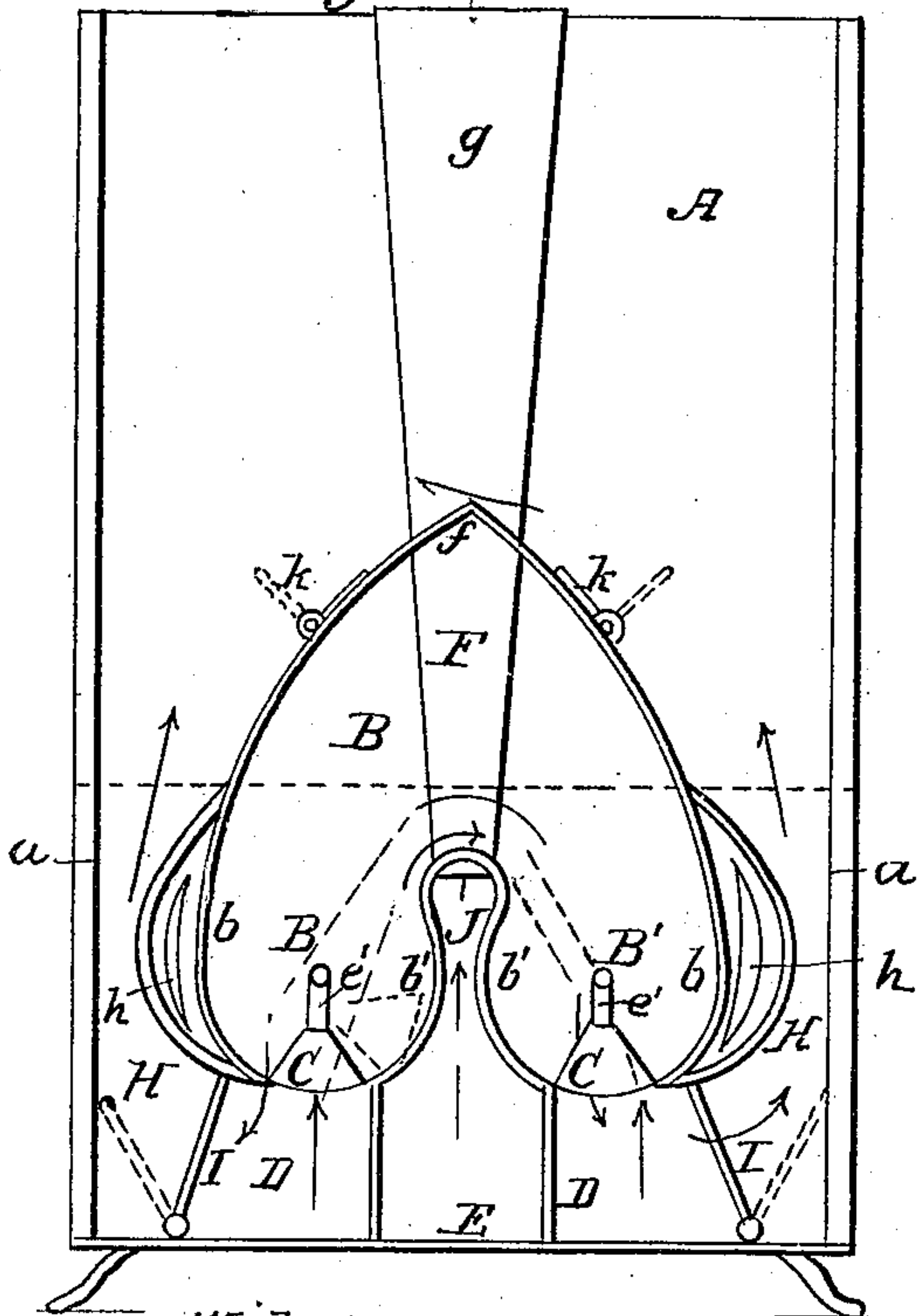
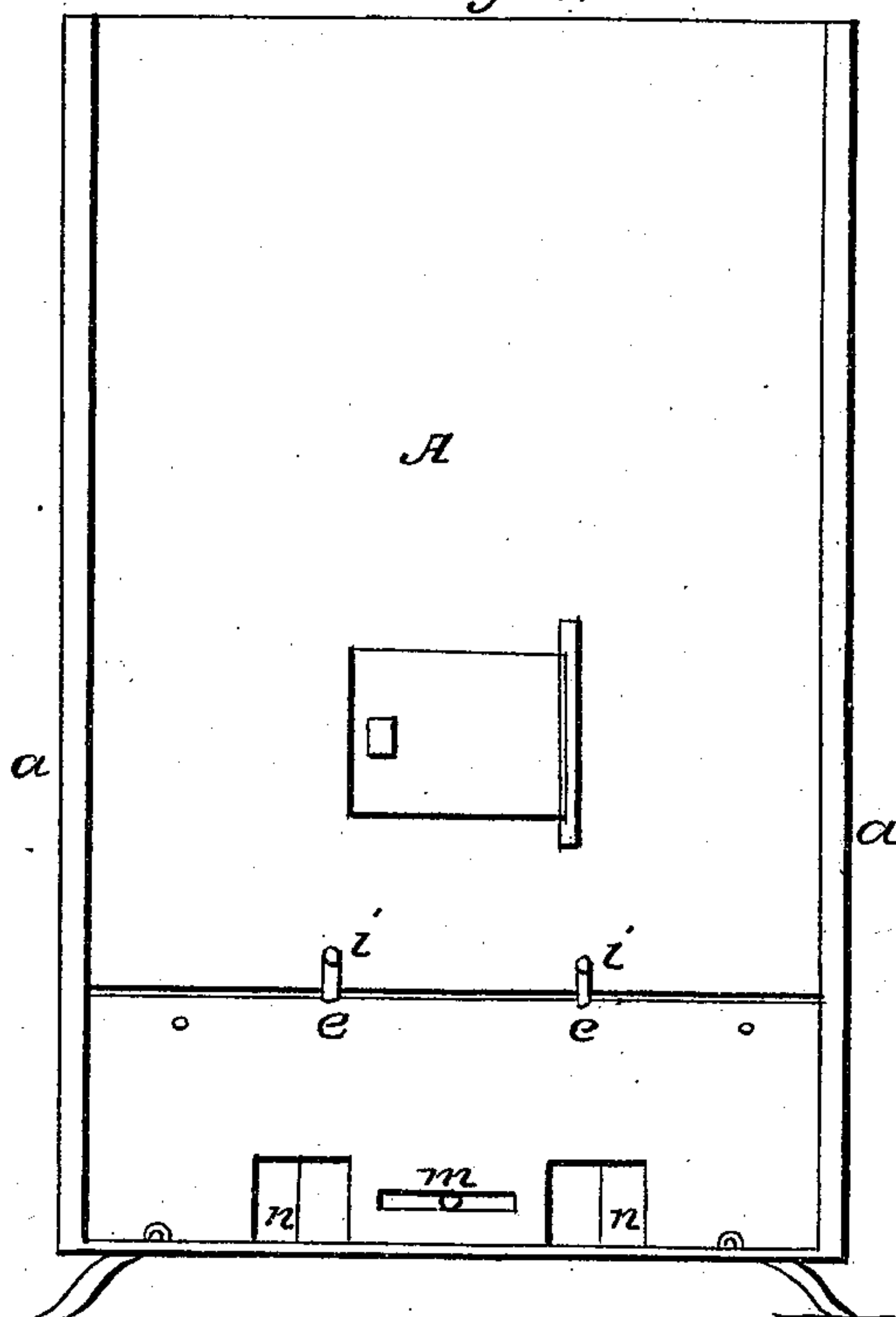


Fig. 4.



Witnesses:
Wm. Frank Brown
J. B. Woodruff

Inventor:

Wilson W. Northrup

UNITED STATES PATENT OFFICE.

NELSON W. NORTHRUP, OF GREENE, NEW YORK.

IMPROVEMENT IN HOT-AIR STOVES.

Specification forming part of Letters Patent No. 34,768, dated March 25, 1862.

To all whom it may concern:

Be it known that I, NELSON W. NORTHRUP, of the town of Greene, in the county of Chenango, State of New York, have made new and useful Improvements in a Gas and Smoke Consuming Stove and Hot-Air Radiator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 shows the internal arrangement of the fire-chambers, radiators, and flues. Fig. 2 is a top view of two fire-chambers and radiators. Fig. 3 is an under side view of stove. Fig. 4 shows a front view.

To enable others skilled in the art to make and use my improved gas and smoke burning stove, I will describe it more fully, referring to the drawings and to the letters of reference marked thereon.

The same letters indicate the same parts in all of the figures.

I construct the body of the stove or radiator A of any convenient size or form. The exterior may be made of plates cast ornamental, or of sheet-iron, inside of which I place an inverted heart-shaped or any other convenient form of fire box and chamber B, made of cast-iron in sections, so as to enable the parts of the fire-chamber which are most exposed to the heat to be readily removed, as is known in the art of constructing stove-plates, of sufficient thickness in the curved sides *b b b' b'* above the grates *c c* to be durable, as they will become heated red when there is much draft on the fires in the chambers B' B'.

In the long narrow openings of the fire-boxes I have swinging or revolving grates *c c*, made in the arc of a circle to radiate from the center, and are hung upon pivots *e e* and *e' e'* at both ends, on one end of which is a crank *o i i*, to shake or turn the grate on either side to liberate the ashes or to discharge the contents of the fire-boxes into the ash-pit or draft-spaces D D below. The segment-grates *c c* are made to correspond with and fit the inside of the curved plates *b b b' b'* of the fire-boxes B B, so that when they are used for the purpose of liberating the ashes or to empty the grates they work entirely free, there being no choking or grinding between the grates and sides

of the fire-boxes, so common in coal-stoves and radiators.

In the center and through the bottom of the stove I have a large opening E, as seen in Fig. 3, to admit a large body of cold air into the space J between the fire-boxes C C, which serves the purpose of keeping the sides *b' b'* of the fire-boxes from burning out, and also furnishing a large quantity of superheated air to be radiated through the pipe F, passing up through the apex *f* of the fire-chamber B and is conducted by a pipe *g* out of the top of the stove A into the room, or the heat may be conveyed by additional pipes to adjoining rooms or upper chambers.

On the opposite or outer sides of the curved fire-boxes *b b* are other smaller air-passages *h h*, for the purpose of preventing the other sides *b b* of the fire-boxes from burning out. These air-passages have holes or openings both back and front to admit free circulation of air either way, which becomes heated and helps to warm the room. Under these side air-passages *h h*, and on the outside of the ash-pits D D in the draft-passages H H, I place hinged dampers I I, which open by turning toward the outsides of the stem *a a* and close against the bottom of the air-passages *h h*, by the turning of which currents of air may be drawn up or down through the grates and fire alternately in either direction.

On both sides of the fire-place B B, above the fires, I have hinged dampers *k k*, which, when closed, and also the dampers I I, cause that there is no draft of air through the fires, although the sliding damper *m* in the front may be so placed as to admit air at both the openings *n n*; but when the dampers *k k* are open there will be a direct draft up through the grates on either one of them as the slide *m* is in position for, and the smoke and gas will pass off as in ordinary stoves; but close the dampers *k k* and open one of the dampers I I and move the sliding valve *m* so as to close the opening *n* on the same side, the smoke and gas will then be drawn into the burning coal and be consumed. Thus by alternately replenishing the grates and changing the position of the dampers the two fires can be kept up in the most perfect order and the smoke and gases all be consumed.

The advantages derived by my invention

are: I provide in the air-chamber E passages Q, one or more, to admit fresh heated air into the combustion-chamber B, in order to promote the burning of the gases of the fuel; that the extremely-heated portions of the stove are so incased that nothing is endangered by coming in close contact with it, while a large amount of radiating-surface is produced in such a manner that the surplus heat may be conducted off to any place desired; also, the easy manner in which the fires can be kept up and the ashes and contents of the grates removed. Likewise in bringing into general use many kinds of cheap free-burning gaseous coal which are now so objectionable in other stoves and radiators.

Having thus fully described my improvements in stoves and radiators, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with the combustion-chamber B, of the double fire-boxes, the revolving or swing grates, the air-heating chambers and flues, the air-passages E, and the governing-dampers *m I I k k*, the whole being constructed and operated substantially as above described.

NELSON W. NORTHRUP.

Witnesses:

J. B. WOODRUFF,
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